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EXAMINER

LE, UYEN CHAU N

ART UNIT

PAPER NUMBER

2876

DATE MAILED: 07/01/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

09/787,093

Applicant(s)

SCHONENBERG ET AL.

Examiner

Uyen-Chau N. Le

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 07 April 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 23-50 and 54-71 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 23-50 and 54-71 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

### **DETAILED ACTION**

1. In view of the Applicant's argument with respect to two stationary operative positions of a foldable mirror of claim 33 and a polygonal mirror comprising a plurality of flat mirror surfaces defining a lateral surface which is closed around an axis of rotation of claim 35 (Amendment filed on 07 April 2005), this action is therefore has made NON-FINAL. New ground(s) of rejection is as set forth below.

### ***Claim Rejections - 35 USC § 103***

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

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4. Claims 64-65 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tamburrini et al (GB 2,345,370) in view of Bridgelall et al (US 5,504,316) and Shlieffers et al (US 5,979,770).

Re claims 64-65: Tamburrini et al discloses a device/barcode reader 100 (fig. 1) for scanning and/or recognizing one or more barcodes comprising a laser light source 215 for transmitting a laser light beam 216 (fig. 2; p. 9, lines 14+); and a timing means, which serves as a control means for switching the laser light source 215 on and off (p. 13, lines 5-8 and p. 27, lines 1-31); a rotatable polygonal mirror (figs. 16-17; p. 21, lines 15+) for reflecting the transmitted laser light 556; a number of mirrors [564, 565, 566, 568, 580, 581, 582 and 583] for reflecting laser light 556 (p. 21, line 15 through p. 24, line 36); collection mirror and detector, which serves as a pick-up element for picking up laser light 556 scattered by a barcode (page 23, lines 8+); a compact housing (figs. 6-7 & 10) to be hand held in which the laser light source 550, the polygonal mirror, mirror 568 for reflecting the laser light (figs. 16-17) and the pick-up element are arranged, wherein the device is to be used alternately in handheld mode and fixed mode (page 4, lines 25+); wherein the housing is completely constructed from the bottom side which is substantially flat for placement of the housing, a top side, a standing rear wall, a standing front wall and two standing side walls arranged there-between (see figs. 6-7 and 10; p. 18, lines 3-19; p. 19, lines 10-26).

Tamburrini et al fails to teach or fairly suggest that a fixed mode scan pattern or a hand mode scan pattern is cast through the standing front wall and both scan patterns being cast through one and the same window in the housing; a resilient holder is

arranged around at least a part of the housing; wherein the protective resilient holder is provided with a number of grooves in order to facilitate the gripping of the holder with a hand of an operator; respectively.

Bridgelall et al teaches both scan patterns (e.g., fixed mode or a hand mode) being cast through one and the same window in the housing of a device 30 (figs. 1b-1c; col. 8, lines 17+; col. 9, lines 37+; and col. 12, lines 61+); a resilient holder is arranged around at least a part of the housing having a rubber gripping 110 with a number of grooves (figs. 20A-20B).

It would have been obvious to an artisan of ordinary skill in the art at the time the invention was made to incorporate the teachings of Bridgelall et al into the teachings of Tamburrini et al in order to provide Tamburrini et al with a more feasible system (i.e., only one scanning window is required instead of two). Furthermore, such modification would provide Tamburrini et al with a more compact system wherein one window would occupy less space, thus a smaller size can be manufactured, and therefore providing the user with a flexibility of carrying the apparatus along conveniently (e.g., in his/her pocket, etc.). Moreover, such modification would provide Tamburrini et al with a more accurate system (e.g., in a fixed mode) wherein the reading device is secure within the resilient, and thus preventing the device from moving during reading process.

Bridgelall et al as modified by Tamburrini et al is silent with respect to the protective resilient holder is arranged at least partially over each of the bottom side, top side, standing rear wall, standing front wall and standing side walls.

Shlieffers et al a resilient gasket 31 is arranged at least partially over each of said bottom side, top side, standing rear wall, standing front wall and standing side walls of a scanning device 10 (figs. 1-4; col. 3, line 32 through col. 4, line 20).

It would have been obvious to an artisan of ordinary skill in the art at the time the invention was made to incorporate the resilient gasket 31 of Shlieffers et al into the system as taught by Bridgelall et al/Tamburrini et al in order to provide Bridgelall et al/Tamburrini et al with a greater capability to protect the scanning device from damage in the event of dropping or accidentally bumped into or rubbed against shelves, walls or other objects during use, and therefore an obvious expedient.

5. Claims 23-24, 31-32, 43, 46-49, 55-57 and 59-61 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tamburrini et al as modified by Bridgelall et al as applied to claim 64 above, and further in view of Tamburrini (US 5,962,838). The teachings of Tamburrini et al as modified by Bridgelall et al have been discussed above.

Re claims 23-24, 31-32, 43, 46-49, 55-57 and 59-61: Tamburrini et al as modified by Bridgelall et al have been discussed above and further discloses a sensing circuit which serves as a position determining means for determining the position of the rotatable polygonal mirror, wherein the sensor means is disposed in the vicinity of the at least one mirror, detecting a passage of the laser beam and the point in time at which the detecting occurs (Tamburrini et al: p. 26, line 27 through p. 27, line 31); wherein the rotatable polygonal mirror comprises a central part and mirror surfaces standing from a first side thereof and is provided on the other side with receiving means which receives

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a drive shaft for rotational driving of the rotatable polygonal mirror (Tamburrini et al: fig. 16; page 21, lines 15+).

Tamburrini et al/Bridgelall et al fails to teach or fairly suggest that the control means switches the laser light source on or off such that, depending on the switching on and off, the laser light beam selectively falls on at least one of the number of mirrors, thereby generating the hand mode scan pattern or the fixed mode scan pattern.

Tamburrini teaches a switching mechanism for switching the laser light source on or off such that the laser light beam selectively falls on at least one of mirror set 104a-f or 102a-f (figs. 1, 2, 4 and 5; col. 3, line 64 through col. 5, line 35).

It would have been obvious to an artisan of ordinary skill in the art at the time the invention was made to incorporate a switching mechanism as taught by Tamburrini into the system of Tamburrini et al/Bridgelall et al in order to provide Tamburrini et al/Bridgelall et al with an advanced system, which does not require any mechanical movement of the pattern generating optics or scan mechanism to switch between scan patterns, and therefore an obvious expedient.

6. Claims 25-28, 33-34, 44, 50, 54 and 62-63 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tamburrini et al as modified by Bridgelall et al and Tamburrini as applied to claim 23 above, and further in view of Schuster (US 4,758,731). The teachings of Tamburrini et al/Bridgelall et al/Tamburrini have been discussed above.

Re claims 25-28, 33-34, 44, 50, 54 and 62-63: Tamburrini et al/Bridgelall et al/Tamburrini has been discussed above and further discloses a folded mirror 273

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(Tamburrini et al: p. 10, lines 16+ and p. 16, lines 13+); a movable mirror (Tamburrini et al: p. 11, lines 22-36); a single lens is moved from one position to another (Tamburrini et al: p. 29, lines 12+).

Tamburrini et al/Bridgelall et al/Tamburrini fails to teach or fairly suggest in the first position of which a substantially flat front mirror surface of the mirror reflects the laser light incident thereon and in the second position of which a substantially concave rear mirror surface reflects the laser light incident thereon.

Schuster teaches an oscillating mirror 12, which serves as a fold mirror, foldable between first position of which a substantially flat front mirror surface 47a of the mirror reflects the laser light incident thereon and in the second position of which a substantially concave rear mirror surface 45 reflects the laser light incident thereon (fig. 1; col. 3, line 50 through col. 4, line 25).

It would have been obvious to an artisan of ordinary skill in the art at the time the invention was made to incorporate a foldable mirror as taught by Schuster into the teachings of Tamburrini et al/Bridgelall et al/Tamburrini in order to enhance a deflective capability of the scanning system, which would provide a large depth of field for the scanner (e.g., causing the laser beam to traverse different path lengths within the scanner), and thus a barcode located anywhere within the overall depth of field of the scanner can be read. Furthermore, such modification would provide Tamburrini et al/Bridgelall et al/Tamburrini with a more feasible and compact system (i.e., one single mirror would accommodate two types of surfaces: flat and concave rather than two



dedicated mirrors, which would reduce the occupancy of space, thus a smaller size of the apparatus can be accomplished, and therefore, reducing the cost of facilitating).

7. Claims 29 and 30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tamburrini et al as modified by Bridgelall et al and Tamburrini as applied to claim 23 above, and further in view of Khowles (US 4,958,894). The teachings of Tamburrini et al/Bridgelall et al/Tamburrini have been discussed above.

Re claims 29 and 30, Tamburrini et al/Bridgelall et al/Tamburrini has been discussed above but fails to teach or fairly suggest that spring means arranged in the housing urge the operating member partially out of the housing whereby the folding means carry the foldable mirror into the second position and locking means for locking the operating member with the foldable mirror in the first position.

Khowles teaches a coil 66, which serves as spring means, for pulling and pushing the bore 70 causing the mirror to oscillate about axis 24 and bumper 74, which serves as locking means, for keeping the mirror in position (fig. 2; col. 4, line 60 through col. 5, line 42).

It would have been obvious to an artisan of ordinary skill in the art at the time the invention was made to incorporate the teachings of Khowles into the teachings of Tamburrini et al/Bridgelall et al/Tamburrini in order to provide Tamburrini et al/Bridgelall et al/Tamburrini with a more accurate system wherein the mirror can be locked/kept in a desired position during operating/reading process, preventing the mirror from moving back and forth between the first and second positions, and thus providing a more accurate reading/scanning result.

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8. Claims 35-36, 38-42, 45 and 66 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tamburrini et al in view of Swift et al (US 6,053,413). The teachings of Tamburrini et al have been discussed above.

Re claims 35-36, 38-42, 45 and 66: Tamburrini et al have been discussed above and further discloses a plurality of flat mirror surfaces [564-566, 580-583] defining a circumferential surface which is closed around an axis of rotation of the polygonal mirror (fig. 16); a scan engine 560, which serves as a drive means for driving a rotating support member (p. 21, lines 22-27).

Tamburrini et al is silent with respect to the plurality of flat mirror surfaces defining a lateral surface, which is closed around an axis of rotation of the polygonal mirror and the polygonal mirror is placed with the-outer ends thereof on the rotating support member.

Swift et al teaches a two-modes of operation (i.e., handheld or fixed) scanner having a plurality of flat mirror surfaces 118 defining a lateral surface, which is closed around an axis of rotation of the polygonal mirror and the polygonal mirror 114 is placed with the-outer ends thereof on the rotating support member (fig. 13; col. 14, lines 12-52 and col. 16, lines 22-67).

It would have been obvious to an artisan of ordinary skill in the art at the time the invention was made to incorporate the teachings of Swift et al into the system as taught by Tamburrini et al in order to provide Tamburrini et al due to the fact that such modification would have been an obvious design variation and a substitution of

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equivalents well within the ordinary skill in the art, for better arrangements of components within the apparatus, and therefore an obvious expedient.

9. Claim 37 is rejected under 35 U.S.C. 103(a) as being unpatentable over Tamburrini et al as modified by Swift et al as applied to claim 35 above, and further in view of Quinn et al (US 5,629,510). The teachings of Tamburrini et al/Swift et al have been discussed above.

Re claim 37, Tamburrini et al/Swift et al has been discussed above but fails to teach or fairly suggest that double-sided tape provided with adhesive is arranged between the ends of the polygonal mirror and the rotating support member.

Quinn et al teaches a parabolic mirror 20 is affixed to the rotating support member/rotor body 22 by adhesive surface 62 (figs. 8 and 10; col. 5, lines 60+).

It would have been obvious to an artisan of ordinary skill in the art at the time the invention was made to incorporate the teachings of using adhesive technique as taught by Quinn et al for affixing the mirror to the rotating support member into the teachings of Tamburrini et al/Swift et al in order to provide Tamburrini et al/Swift et al with a more feasible system (i.e., due to the less cost of adhesive). Furthermore, such modification would provide Tamburrini et al/Swift et al with a more accurate system wherein the adhesive would keep the mirror affixed to the rotating support member, preventing the mirror from loosening and rotating at different speed/angle with the rotating support member, and thus preventing the system from producing an inaccurate result from an inaccurate reading.

10. Claims 67-71 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tamburrini et al as modified by Swift et al as applied to claim 35 above, and further in view of Tamburrini (US 5,962,838). The teachings of Tamburrini et al as modified by Swift et al have been discussed above.

Tamburrini et al/Swift et al have been discussed above but fail to teach or fairly suggest that the control means switches the laser light source on or off such that, depending on the switching on and off, the laser light beam selectively falls on at least one of the number of mirrors, thereby generating the hand mode scan pattern or the fixed mode scan pattern.

Tamburrini teaches a switching mechanism for switching the laser light source on or off such that the laser light beam selectively falls on at least one of mirror set 104a-f or 102a-f (figs. 1, 2, 4 and 5; col. 3, line 64 through col. 5, line 35).

It would have been obvious to an artisan of ordinary skill in the art at the time the invention was made to incorporate a switching mechanism as taught by Tamburrini into the system of Tamburrini et al/Swift et al in order to provide Tamburrini et al/Swift et al with an advanced system, which does not require any mechanical movement of the pattern generating optics or scan mechanism to switch between scan patterns, and therefore an obvious expedient.

### ***Response to Arguments***

11. Applicant's arguments with respect to claims 33, 35, 62 and 64 have been considered but are moot in view of the new ground(s) of rejection.

12. In response to the Applicant's argument with respect to claims 23 and 57 to "...The '838 patent does not teach or suggest each mirror is aligned side by side along a single substantially circumferential direction for reflecting the laser light beam..." (p. 15, 1<sup>st</sup> paragraph), the examiner respectfully requests the Applicant to further review Tamburrini wherein each mirror 102 is aligned side by side along a single substantially circumferential direction for reflecting the laser light beam (fig. 1). Furthermore, the claimed transitional phrase is "comprising," which is an open-ended. Accordingly, the claimed limitation, given the broadest reasonable interpretation, Tamburrini meets the claimed invention (see the rejection above). Moreover, a two-modes scanning device of Swift et al also has each mirror [118a-118e] is aligned side by side along a single substantially circumferential direction for reflecting the laser light beam (see fig. 13; col. 16, lines 22-67).

### ***Conclusion***

13. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

The patents to Scheps (US 5276695 A); Scheps (US 5307358 A); Dvorkis et al (US 5859417 A); Kumagai et al (US 6216953 B1) and Dvorkis et al (US 6382513 B1) are cited as of interest and illustrate a similar structure to a device for reading a barcode.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Uyen-Chau N. Le whose telephone number is 571-272-2397. The examiner can normally be reached on Mon, Wed. and Fri. 5:30AM-6:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, MICHAEL G LEE can be reached on 571-272-2398. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



*Uyen-Chau N. Le*  
June 27, 2005